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EXAMINER

JACOBS, LASHONDA T

ART UNIT

PAPER NUMBER

2157

DATE MAILED: 07/30/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/607,500

Applicant(s)

ALAM ET AL.

Examiner

LaShonda T. Jacobs

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 30 June 2000.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-25 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-25 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ 6) ☐ Other: _____

DETAILED ACTION

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

2. Claims 1-4, 6, 8-9, 12-13, 16-19, 21, and 23 are rejected under 35 U.S.C. 102(e) as being anticipated by LiVecchi.

As per claims 1 and 17, LiVecchi discloses a networked environment, wherein one or more client computer systems make requests for information from a server computer system, the server computer system providing information in response to the requests from the one or more client computer systems, the server computer system having one or more listen sockets and having a backlog queue for queuing connection requests that the server computer system cannot currently handle, a method of reducing denials of service even though the server computer system is experiencing a denial of service attack, the method comprising:

- attempting a connection for each connection request received by the server computer system from said one or more client computer systems (col. 1, lines 51-58, col. 3, lines 3-6, col. 10, lines 52-56, and col. 11, lines 1-15);

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- for each connection request that the server computer system cannot currently handle, placing the connection request in a backlog queue (col. 7, lines 45-64, and col. 13, lines 15-26);
- monitoring the backlog queue (col. 3, lines 16-29, and col. 15, lines 13-36);
- determining that the backlog queue is being used (col. 3, lines 16-29, and col. 15, lines 13-36);
- resetting one or more connection sockets upon notification that the backlog queue is being used (col. 15, lines 41-66).

As per claim 2, LiVecchi discloses a method in accordance with Claim 1, further comprising mapping each connection request to a corresponding listen socket (col. 3, lines 16-40, and col. 12, lines 5-22).

As per claim 3, LiVecchi discloses the method in accordance with Claim 2, wherein each listen socket has a corresponding backlog queue (col. 15, line 67, and col. 16, lines 1-10).

As per claims 4 and 19, LiVecchi discloses the method in accordance with Claim 3, wherein placing the connection request in a backlog queue comprises placing the request in the backlog queue corresponding to the listen socket that the connection request mapped to (col. 3, lines 16-40, col. 12, lines 5-22, col. 15, line 67, and col. 16, lines 1-10).

As per claim 6, LiVecchi discloses the method in accordance with Claim 1, wherein attempting a connection comprises calling a module that accepts connections and waits for request data before completing (col. 9, lines 66-67, col. 10, lines 1-18, lines 27-47, col. 11, lines 66-67, col. 12, lines 1-35, and col. 16, lines 18-67).

As per claim 8, LiVecchi discloses the method in accordance with Claim 1, wherein monitoring the backlog queue comprises calling a module that scans at least the backlog queue for activity (col. 3, lines 16-40, col. 9, lines 66-67, col. 10, lines 1-18, lines 27-47, col. 15, line 67, col. 16, lines 1-10, and lines 18-67).

As per claim 9, LiVecchi discloses the method in accordance with Claim 8, wherein determining that the backlog queue is being used comprises detecting that the module that scans at least the backlog queue has returned (col. 3, lines 16-40, col. 9, lines 66-67, col. 10, lines 1-18, lines 27-47, col. 15, line 67, col. 16, lines 1-10, and lines 18-67).

As per claims 12 and 21, LiVecchi discloses the method in accordance with Claim 1, wherein resetting one or more connection sockets upon notification that the backlog queue is being used comprises the following:

- identifying any connection sockets that have connections but no received request data (col. 15, line 67, col. 16, lines 1-10, and 18-67); and
- disconnecting the identified connection sockets (col. 15, line 67, col. 16, lines 1-10, and lines 18-67).

As per claim 13, LiVecchi discloses the method in accordance with Claim 12, wherein identifying any connection sockets that have connections but no received request data comprises the following:

- calling a module that identifies the state of the connection socket (col. 15, line 67, col. 16, lines 1-10, and lines 18-67).

As per claims 16 and 23, LiVecchi discloses the method in accordance with Claim 1, wherein attempting a connection for each connection request received by the server computer

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system from said one or more client computer systems comprises establishing a connection (col. 1, lines 51-58, col. 3, lines 3-6, col. 10, lines 52-56, and col. 11, lines 1-15).

As per claim 18, LiVecchi discloses the computer program product in accordance with Claim 17, further comprising computer-executable instructions for mapping each connection request to a corresponding listen socket, wherein each listen socket has a corresponding backlog queue (col. 3, lines 16-40, and col. 12, lines 5-22, col. 15, line 67, and col. 16, lines 1-10).

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 5, 7, 10-11, 14-15, 20, 22, and 24-25 are rejected under 35 U.S.C. 103(a) as being unpatentable over LiVecchi in view of Sugiyama et al (hereinafter, "Sugiyama", 6,574,662).

As per claim 5, Livecchi discloses the invention substantially as claimed including the method in accordance with Claim 1, wherein attempting a connection for each connection request received by the server computer system from said one or more client computer systems.

However, LiVecchi does not explicitly disclose:

- using a Winsock module.

Sugiyama discloses a network device management method for searching a device connected to the network using WinSock API modules (col. 6, lines 54-67 and col. 8, lines 15-49).

Given the teaching of Sugiyama, it would have been obvious to one of ordinary skill in the art to modify LiVecchi by specifying the application program interface as WinSock API module since the same functionality is achieved.

As per claim 7, LiVecchi discloses the invention substantially as claimed including, the method in accordance with Claim 6, wherein the module that accepts connects and waits for request data before completing.

However, LiVecchi does not explicitly disclose:

- a Winsock()AcceptEx() module.

Sugiyama discloses a network device management method for searching a device connected to the network using WinSock API modules (col. 6, lines 54-67 and col. 8, lines 15-49).

Given the teaching of Sugiyama, it would have been obvious to one of ordinary skill in the art to modify LiVecchi by specifying the application program interface as WinSock API module since the same functionality is achieved.

As per claim 10, LiVecchi discloses the invention substantially as claimed including, the method in accordance with Claim 8, wherein the module that scans at least the backlog queue for activity.

However, LiVecchi does not explicitly disclose:

- a Winsock()select() module.

Sugiyama discloses a network device management method for searching a device connected to the network using WinSock API modules (col. 6, lines 54-67 and col. 8, lines 15-49).

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Given the teaching of Sugiyama, it would have been obvious to one of ordinary skill in the art to modify LiVecchi by specifying the application program interface as WinSock API module since the same functionality is achieved.

As per claim 11, LiVecchi discloses the invention substantially as claimed including, the method in accordance with Claim 10, wherein determining that the backlog queue is being used.

However, LiVecchi does not explicitly disclose:

- detecting that the a Winsock()select() module has returned.

Sugiyama discloses a network device management method for searching a device connected to the network using WinSock API modules (col. 6, lines 54-67 and col. 8, lines 15-49).

Given the teaching of Sugiyama, it would have been obvious to one of ordinary skill in the art to modify LiVecchi by specifying the application program interface as WinSock API module since the same functionality is achieved.

As per claim 14, LiVecchi discloses the invention substantially as claimed including the method in accordance with Claim 13, wherein the module identifies the state of the connection socket.

However, LiVecchi does not explicitly disclose:

- Winsock()getsockopt() module.

Sugiyama discloses a network device management method for searching a device connected to the network using WinSock API modules (col. 6, lines 54-67 and col. 8, lines 15-49).

Given the teaching of Sugiyama, it would have been obvious to one of ordinary skill in the art to modify LiVecchi by specifying the application program interface as WinSock API module since the same functionality is achieved.

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As per claim 20, LiVecchi discloses the invention substantially as claimed including the computer program product in accordance with Claim 17, wherein the computer-executable instructions for attempting a connection for each connection request received by the server computer system from said one or more client computer systems.

However, LiVecchi does not explicitly disclose:

- portions of a WinSock module.

Sugiyama discloses a network device management method for searching a device connected to the network using WinSock API modules (col. 6, lines 54-67 and col. 8, lines 15-49).

Given the teaching of Sugiyama, it would have been obvious to one of ordinary skill in the art to modify LiVecchi by specifying the application program interface as WinSock API module since the same functionality is achieved.

As per claim 24, LiVecchi discloses a networked environment, wherein one or more client computer system make requests for information from a server computer system, the server computer system providing information in response to the requests from the one or more client computer systems, the server computer system having one or more listen sockets, each listen socket having a backlog queue for queuing connection requests that the server computer system cannot currently handle, a method of reducing denials of service even though the server computer system is experiencing a denial of service attack, the method comprising:

- attempting a connection for each connection request received by the server computer system from said one or more client computer systems (col. 1, lines 51-58, col. 3, lines 3-6, col. 10, lines 52-56, and col. 11, lines 1-15);

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- mapping each connection request to a corresponding listen socket (col. 3, lines 16-40, and col. 12, lines 5-22);
- for each connection request that the server computer system cannot currently handle, placing the connection request in the backlog queue corresponding to the listen socket that the connection request mapped to (col. 7, lines 45-64, and col. 13, lines 15-26);
- monitoring the backlog queue (col. 3, lines 16-29, and col. 15, lines 13-36);
- determining that the backlog queue is being used (col. 3, lines 16-29, and col. 15, lines 13-36);
- identifying any connection sockets that have connections but no received request data (col. 15, line 67, col. 16, lines 1-10, and 18-67); and
- disconnecting the identified connection sockets (col. 15, line 67, col. 16, lines 1-10, and lines 18-67).

However, LiVeechi does not explicitly disclose:

- the use of WinSock API modules.

Sugiyama discloses a network device management method for searching a device connected to the network using WinSock API modules (col. 6, lines 54-67 and col. 8, lines 15-49).

Given the teaching of Sugiyama, it would have been obvious to one of ordinary skill in the art to modify LiVecchi by specifying the application program interface as WinSock API module since the same functionality is achieved.

As per claims **15**, **22**, and **25**, LiVecchi discloses the method in accordance with Claim 1, further comprising:

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- specifying a grace period between the time the backlog queue is determined to be used and the time one or more connection sockets are reset to allow the server computer system to empty the backlog queue, wherein the resetting of the one or more connection sockets is performed only if the backlog queue still has entries after the grace period (col. 13, lines 15-67, and col. 14, lines 1-26).

Conclusion

5. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.


U.S. Pat. No. 5,999,965 to Kelly

Any inquiry concerning this communication or earlier communications from the examiner should be directed to LaShonda T. Jacobs whose telephone number is 703-305-7494. The examiner can normally be reached on 8:30 AM - 5:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Ario Etienne can be reached on 703-308-7562. The fax phone numbers for the organization where this application or proceeding is assigned are 703-746-7239 for regular communications and 703-746-7238 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-305-3900.

LaShonda T. Jacobs
Examiner
Art Unit 2157


SALEH NAJJAR
PRIMARY EXAMINER